



CTCGTGCCGAATTCGGCACGAGACCGCGTGTTCCGCGCCTGGTAGAGATTTCTCGAAGACA
CCAGTGGGCCCCTGTGGAACCAAACCTGCGCGCTGGCCGGGCCGTGGGACAACGAGGCC
GCGGAGACGAAGGCGCAATGGCGAGGAAGTTATCTGTAATCTTGATCCTGACCTTTGCCC
TCTCTGTACAAATCCCCTTCATGAACATAAAGCAGCTGCTTTCCCCCAGACCACTGAGA
AAATTAGTCCGAATTGGGAATCTGGCATTAAATGTTGACTTGGCAATTTCCACACGGCAAT
ATCATCTACAACAGCTTTTCTACCGCTATGGAGAAAATAATTCTTTGTGAGTTGAAGGT
TCAGAAAATTACTTCAAAATATAGGCATAGATAAGATTAAAAGAATCCATATACACCATG
ACCACGACCATCACTCAGACCACGAGCATCACTGACCATGATCATCACTCTCACCATAATCATG
AGCATCACTCAGACCACGAGCATCACTGACCATGATCATCACTCTCACCATAATCATG
CTGCTTCTGGTAAAAATAAGCGAAAAGCTCTTTGCCAGACCATGACTCAGATAGTTGAG
GTAAAGATCCTAGAAACAGCCAGGGGAAAGGAGCTCACCGACCAGAACATGCCAGTGGTA
GAAGGAATGTCAAGGACAGTGTTAGTGCTAGTGAAGTGACCTCAACTGTGTACAACACTG
TCTCTGAAGGAACCTCACTTTCTAGAGACAATAGAGACTCCAAGACCTGGAAAACCTCTTCC
CCAAAGATGTAAGCAGCTCCACTCCACCAAGTGTACATCAAAGAGCCGGGTGAGCCGGC
TGGCTGGTAGGAAAACAAATGAATCTGTGAGTGAGCCCCGAAAAGGCTTTATGTATTCCA
GAAACACAAATGAAAATCCTCAGGAGTGTTTCAATGCATCAAAGCTACTGACATCTCATG
GCATGGGCATCCAGGTTCCGCTGAATGCAACAGAGTTCAACTATCTGTCCAGCCATCA
TCAACCAAATTGATGCTAGATCTTGTCTGATTACATAAAGTAAAAGAAGGCTGAAATCC
CTCCAAAGACCTATTCAATACAAATAGCCTGGGTTGGTGGTTTTATAGCCATTTCCATCA
TCAGTTTCTGTCTCTGCTGGGGTTTCTTAGTGCTCTCATGAATCGGGTGTTTTTCA
AATTTCTCTGAGTTTCTTGTGGCACTGGCCGTTGGGACTTTGAGTGGTGATGCTTTTT
TACACCTTCTTCCACATTCTCATGCAAGTCACCACCATAGTCATAGCCATGAAGAACCAG
CAATGGAAATGAAAAGAGGACCACTTTTCAGTCATCTGTCTTCTCAAACATAGAAGAAA
GTGCCTATTTTGATTCCACGTGGAAGGGTCTAACAGCTCTAGGAGGCTGTATTTTCATGT
TTCTTGTTGAACATGTCTCATTGATCAAAACAAATTTAAAGATAAGAAGAAAAAGAATC
AGAAGAAACCTGAAAATGATGATGATGTGGAGATTAAGAAGCAGTTGTCCAAGTATGAAT
CTCAACTTTCAACAAATGAGGAGAAAGTAGATACAGATGATCGAACTGAAGGCTATTTAC
GAGCAGACTCACAAGAGCCCTCCCACTTTGATTCTCAGCAGCCTGCAGTCTTGAAGAAG
AAGAGGTCATGATAGCTCATGCTCATCCACAGGAAGTCTACAATGAATATGTACCCAGAG
GGTGCAAGAATAAATGCCATTACATTTCACAGTACACTCGGCCAGTCAGACGATCTCA
TTCACCACCATCATGACTACCATCATATTCTCCATCATCACCACCACCAAAACCACCATC
CTCACAGTCACAGCCAGCGCTACTCTCGGGAGGAGCTGAAAGATGCCGGCGTCCGCCACT
TGGCCTGGATGGTGATAATGGGTGATGGCTGCACAATTTACGCGATGGCCTAGCAATTG
GTGCTGCTTTTACTGAAGGCTTATCAAGTGGTTAAGTACTTCTGTTGCTGTGTTCTGTG
ATGAGTTGCCTCATGAATTAGGTGACTTTGCTGTTCTACTAAAGGCTGGCATGACCGTTA
AGCAGGCTGTCTTTATAATGCATTGTACGCCATGCTGGCGTATCTTGAATGGCAACAG
GAATTTTCATTGTTGCTATTATGCTGAAAATGTTTCTATGTGGATATTTGCACTTACTGCTG
GCTTATTCATGTATGTTGCTCTGGTTGATATGGTACCTGAAATGCTGCACAATGATGCTA
GTGACCATGGATGTAGCCGCTGGGGGTATTTCTTTTTACAGAATGCTGGGATGCTTTTGG
GTTTTGGAATTATGTTACTTAATTTCCATATTTGAACATAAAATCGTGTTCGTATAAATT
TCTAGTTAAGGTTTAAATGCTAGAGTAGCTTAAAAAGTTGTCATAGTTTCAGTAGGTCAT
AGGGAGATGAGTTTGTATGCTGTACTATGCAGCGTTTAAAGTTAGTGGGTTTTGTGATTT
TTGTATTGAATATTGCTGTCTGTTACAAAGTCAGTTAAAGGTACGTTTTAATATTTAAGT
TATTCTATCTTGGAGATAAAATCTGTATGTGCAATTCACCGGTATTACCAGTTTATTATG
TAAACAAGAGATTTGGCATGACATGTTCTGTATGTTTCAGGGAAAAATGTCTTTAATGCT
TTTTCAAGAACTAACACAGTTATTCTTATACTGGATTTTAGGTCTCTGAAGAACTGCTGG
TGTTTAGGAATAAGAATGTGCATGAAGCCTAAAATACCAAGAAAGCTTATACTGAATTTA
AGCAAAGAAATAAAGGAGAAAAGAGAAGAAATCTGAGAATTGGGGAGGCATAGATTCTTAT
AAAAATCACAAAATTTGTTGTAAATTAGAGGGGAGAAATTTAGAATTAAGTATAAAAAAGG
CAGAATTAGTATAGAGTACATTCATTAAACATTTTGTGAGGATTATTTCCCGTAAAAAC
GTAGTGAGCACTCTCATATACTAATTAGTGACATTTAACTTTGTATAATACAGAAATCT
AAATATATTTAATGAATTCAGCAATATACACTTGACCAAGAAATTTGGAATTTCAAATG
TTCGTGCGGTTTATATACAGATGAGTACAGTGAGTAGTTTATGTATCACCAGACTGGGT
TATTGCCAAGTTATATATCACCAAAAGCTGTATGACTGGATGTTCTGGTTACCTGGTTTA
CAAAATTATCAGAGTAGTAAACCTTTGATATATATGAGGATATTAAGGCTACACTAAGTA
TCATTTGATTGATTGAAAGTACTTTGATAATCTCTCAGTGCTTCAGTCTCATCATTTGT
GAGCAATTGTCTTTATATACGGTACTGTAGCCATACTAGGCCTGTCTGTGGCATTCTCTA
GATGTTTCTTTTTTACACAATAAATTCCTTATATCAGCTTG

FIG. 1



ATGGCGAGGAAGTTATCTGTAATCTTGATCCTGACCTTTGCCCTCTCTGTACAAATCCC
CTTCATGAACATAAAGCAGCTGCTTTCCCCAGACCACTGAGAAAATTAGTCCGAATTGG
GAATCTGGCATTAAATGTTGACTTGGCAATTTCCACACGGCAATATCATCTACAACAGCTT
TTCTACCGCTATGGAGAAAATAATTCTTTGTGAGTTGAAGGGTTCAGAAAATTACTTCAA
AATATAGGCATAGATAAGATTAAGAATCCATATACACCATGACCACGACCATCACTCA
GACCACGAGCATCACTCAGACCATGAGCGTCACTCAGACCATGAGCATCACTCAGACCAC
GAGCATCACTCTGACCATGATCATCACTCTCACCATAATCATGCTGCTTCTGGTAAAAAT
AAGCGAAAAGCTCTTTGCCAGACCATGACTCAGATAGTTAGGTAAAGATCCTAGAAAC
AGCCAGGGGAAAGGAGCTCACCGACCAGAACATGCCAGTGGTAGAAGGAATGTCAAGGAC
AGTGTAGTGTAGTGAAGTGACCTCAACTGTGTACAACACTGTCTCTGAAGGAACCTCAC
TTTCTAGAGACAATAGAGACTCCAAGACCTGGAAAACCTTTCCCCAAAGATGTAAGCAGC
TCCACTCCACCCAGTGTACATCAAAGAGCCGGGTGAGCCGGCTGGTGGTAGGAAAACA
AATGAATCTGTGAGTGAGCCCCGAAAAGGCTTTATGTATTCCAGAAACACAAATGAAAAT
CCTCAGGAGTGTTCATGCAATGCAAAAGCTACTGACATCTCATGGCATGGGCATCCAGGTT
CCGCTGAATGCAACAGAGTTCAACTATCTCTGTCCAGCCATCATCAACCAAAATTGATGCT
AGATCTTGTCTGATTACATAAGTGAAAAGAAGGCTGAAATCCCTCCAAAGACCTATTCA
TTACAAATAGCCTGGGTTGGTGGTTTTATAGCCATTTCCATCATCAGTTTCTGTCTCTG
CTGGGGGTTATCTTAGTGCCTCTCATGAATCGGGTGTTCCTTCAAATTTCTCCTGAGTTTC
CTTGTGGCACTGGCCGTTGGGACTTTGAGTGGTGTGCTTTTTTACACCTTCTTCCACAT
TCTCATGCAAGTCACCAACCATAGTCATAGCCATGAAGAACCAGCAATGGAATGAAAAGA
GGACCACTTTTTCAGTCATCTGTCTTCTCAAAACATAGAAGAAAGTGCCATTCTTTCATTCC
ACGTGGAAGGGTCTAACAGCTCTAGGAGGCTGTATTTTCATGTTTCTTGTGAAACATGTC
CTCACATTGATCAAACAATTTAAGATAAGAAGAAAAGAAATCAGAAGAAACCTGAAAAT
GATGATGATGTGGAGATTAAGAAGCAGTTGTCCAAGTATGAATCTCAACTTTCAACAAAT
GAGGAGAAAGTAGATACAGATGATCGAAGTGAAGGCTATTTACGAGCAGACTCACAAAGAG
CCCTCCCACTTTGATTCTCAGCAGCCTGCAGTCTTGGAAAGAAGAGGTCATGATAGCT
CATGCTCATCCACAGGAAGTCTACAATGAATATGTACCCAGAGGGTGCAAGAATAAATGC
CATTACATTTCCACGATACACTCGGCCAGTCAGACGATCTCATTACCAACCATCATGAC
TACCATCATATTCTCCATCATCACCACCACCAAAACCACCATCCTCACAGTCACAGCCAG
CGTACTCTCGGAGGAGCTGAAAGATGCCGGCGTCGCCACTTTGGCCTGGATGGTGATA
ATGGGTGATGGCCTGCACAATTTACGCGATGGCCTAGCAATTGGTGCTGCTTTTACTGAA
GGCTTATCAAGTGTTTAAAGTACTTCTGTTGCTGTGTTCTGTGATGAGTTGCCTCATGAA
TTAGGTGACTTTGCTGTTCTACTAAAGGCTGGCATGACCGTTAAGCAGGCTGCTCTTTAT
AATGCATTGTCAGCCATGCTGGCGTATCTTGGAAATGGCAACAGGAATTTTCATTGGTCAT
TATGCTGAAAATGTTTCTATGTGGATATTTGCACTTACTGCTGGCTTATTTCATGTATGTT
GCTCTGGTTGATATGGTACCTGAAATGCTGCACAATGATGCTAGTGACCATGGATGTAGC
CGCTGGGGGTATTTCTTTTACAGAATGCTGGGATGCTTTTGGGTTTTGGAATTATGTGA
CTTAATTTCCATATTTGAACATAAAATCGTGTTCGTATAAAATTTCTAG

FIG.2

MARKLSVILILTFALSVTNPLHELKAAAFPTTEKISPWNWESGINVDLAISTRQYHLQQL
FYRYGENNSLSVEGFRKLLQNIIGIDKIKRIHHHDHSDHEHSDHERHSDHEHSDH
EHSDHHDHSHHNHAASGKNKRKALCPDHDSDSSGKDPRNSQGKGAHRPEHASGRNVKD
SVSASEVTSTVYNTVSEGFHLETIETPRPGKLPKDVSSSTPPSVTSKSRVSRLAGRKT
NESVSEPRKGFMYSRNTNENPQECFNASKLLTSHGMGIQVPLNATEFNLYCPAIINQIDA
RSCLIHTEKKAEIPPKTYSLQIAWVGFIATISITSELSLGLVILYPLMNRVFEKELSE
LVALAVGTLSGDAFLHLLPHSHASHHHSHSHEEPAMEMKRGPLFSLSSQNIIEESAYFDS
TWKGLTALGGLYFHFLEVEHVLTLIKQFKDKKKKNQKKPENDDVEIKKQLSKYESQLSTN
EEKVDTDRTGEGYLRADSQEPHFDSQQPAVLEEEVMIHAHPQEVYNEYVPRGCKNKC
HSHFDTLGQSDDLIHHHDYHHILHHHHHQNHHPHSHSQRYSREELKDAGVATLAWMVI
MGDGLHNFSDGLAIGAAFTGLSSGLSTSVAVFCHELPHELGDFAVLLKAGTVKQAVLYN
ALSAMLAYLGMATGIFIGHYAENVSMWIFALTAGIFMYVALVDMVPEMLHNDASDNGCSR
WGYFFLQNAHMLLGGGIMLLISIFEHKIVFRINF.

FIG.3